



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,018	03/15/2001	David Nister	040000-710	4578
27045	7590	12/20/2004	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			SEALEY, LANCE W	
			ART UNIT	PAPER NUMBER
			2671	

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/808,018	<b>Applicant(s)</b> NISTER ET AL.	
	<b>Examiner</b> Lance W. Sealey	<b>Art Unit</b> 2671	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-10,13-15,20-24 and 28-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-10,13-15 and 29-30 is/are allowed.
- 6) ☒ Claim(s) 20-24,28,32,33,35 and 36 is/are rejected.
- 7) ☒ Claim(s) 31,34 and 37-39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit 2671

## **DETAILED ACTION**

### ***Allowed and Allowable Subject Matter***

1. Claims 4-10, 13-15 and 29-30 are allowed, and claims 37 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. No prior art anticipates or suggests, in a method of preprocessing a sequence of video frames, selecting a frame for deletion if the motion estimation yields a final correlation coefficient above a predetermined threshold (claims 4, 13, 29, 34 and 37), and deleting any frames that differ from a previous adjacent frame by an amount less than the predetermined threshold amount until a calculated total difference exceeds the predetermined threshold amount, said calculated total difference being the sum of the differences between each deleted frame and the deleted frame's previous adjacent frame (claim 30). Claims 5-10, 14-15 and 38-39 are allowed because they depend on allowed claims.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of 35 U.S.C. 102(b) and (e) which form the basis for all novelty-related rejections set forth in this Office action:

A person shall be entitled to a patent unless—

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or sale in this country, more than one year prior to the date of application for patent in the United States; or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an

## Art Unit 2671

international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by applicant for patent.

4. Claims 20, 31-33 and 35-36 are rejected under 35 U.S.C. § 102(e) as being unpatentable over Lippman (U.S. Pat. No. 6,724,433).

5. With respect to claim 20, Lippman, in disclosing automated inverse telecine conversion, also discloses a source for a sequence of video frames (video source **102**, FIG.1), a storage medium (memory used by inverse telecine module **104**, FIG.1), and a preprocessor, connected to the source and storage medium (processor that executes the inverse telecine module **104**, FIG.1) comprising means for selecting a frame to be intentionally deleted (**520**, FIG.5), and means for deleting the selected frame (**530**, FIG.5). The Structure From Motion limitation of this claim was not considered; since it only appears in the preamble of this claim, it was not given patentable weight.

6. Claim 31 features functional language (steps (a)-(e)) in an apparatus claim, indicated by "A *preprocessor* for preprocessing...". "Apparatus claims cover what a device *is*, not what a device *does*." See MPEP 2114.

7. In such a situation, only the parts of the claim that define structure need be considered. Since the only structure disclosed in claim 31 is a preprocessor, Lippman discloses a preprocessor (processor that executes the inverse telecine module **104**, FIG.1). With respect for the rest of the preamble, the Structure From Motion limitation of this claim was not given patentable weight.

8. Regarding claim 32, Lippman discloses receiving the sequence of video frames (col.7,

Art Unit 2671

ll.34-36), selecting a frame from the sequence to be intentionally deleted (**520**, FIG.5) and deleting the selected frame (**530**, FIG.5). The parts of this claim which refer to processing a sequence of video frames to produce a decimated subset of frames prior to further processing was not considered because it only appears in the preamble of the claim and was therefore not given patentable weight.

9. With respect to claims 33 and 36, Lippman discloses both determining whether the frame is essential for connectivity of the video sequence and selecting the frame upon determining that the frame is not essential for connectivity of the video sequence in **520**, FIG.5.

10. Concerning claim 35, Lippman discloses comparing the frame with a previously received frame and selecting the frame if the comparing step indicates that a difference between the frame and the previously received frame is less than a predetermined amount at col.11, ll.32-39 and col.12, ll.14-15 (if the summation between the pixels of the two frames being compared equals zero, the frame is designated as redundant. That means that the "predetermined amount" has to be a summation that yields the lowest possible number above zero accommodated by the computer.)

11. Accordingly, in view of the foregoing, claims 20, 32-33 and 35-36 are anticipated under 35 U.S.C. 102(e) by Lippman.

***Claim Rejections - 35 USC §103***

12. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit 2671

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 21-23 and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lippman in view of Wang (U.S. Pat. No. 6,707,852).

14. With respect to claim 21, Lippman does not explicitly disclose a data buffer. This is disclosed by the Wang encoding method at col.6, ll.4-5.

15. Therefore, it would be obvious to one of ordinary skill in the art at the time this invention was made to incorporate the Wang data buffer into the Lippman inverse telecine method by incorporating use of the data buffer at Lippman inverse telecine step **520** FIG.5. Data buffers permit the encoder to perform the comparison operations needed to determine the difference between any two frames (Wang, col.11, ll.53-57).

16. Concerning claim 22, Lippman discloses a video capture device (video source **102**, FIG.1) .

17. Regarding claim 23, Lippman discloses a memory device (memory used by inverse telecine module **104**, FIG.1).

18. Finally, concerning claim 28, Lippman discloses a video sequence received as a sequence

Art Unit 2671

of frames from the video capture device in real-time at col.8, 1.66 to col.9, 1.4.

19. Accordingly, in view of the foregoing, claims 21-23 and 28 have been rendered unpatentable under 35 U.S.C. 103(a) by Lippman and Wang.

20. Claim 24 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lippman in view of Wikipedia, the Free Encyclopedia ("Wikipedia") .

21. Lippman does not explicitly disclose flash memory. But Wikipedia's description of flash memory states that NOR flash memory was invented by Intel in 1988.

22. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to incorporate the Lippman inverse telecine method with flash memory. Flash memory is suitable for storage of program code that needs to be infrequently updated, such as the memory that houses the Lippman inverse telecine method.

23. Accordingly, in view of the foregoing, claim 24 has been rendered unpatentable under 35 U.S.C. 103(a) by Lippman and Wikipedia.

***Response to Remarks***

24. Since the examiner agrees that Ishikawa (U.S. Pat. No. 6,600,835), which was used to reject several claims in the last Office action including claims 4, 13 and 14, does not disclose selecting a frame for deletion if the motion estimation yields a final correlation coefficient above a predetermined threshold, he now allows claims 4, 13, 14, 29 and their dependent claims.

25. The applicant next asserts that previously established claims 20-24 and 28, and new claims 32-39, should be allowed because Ishikawa does not disclose selecting a frame from a

Art Unit 2671

sequence to be intentionally deleted. The examiner agrees that Ishikawa does not disclose this claim limitation, and asserts that this limitation is disclosed by Lippman. Lippman also discloses the additional limitations of claims 28, 32-33 and 35-36, Wang discloses the additional limitations of claims 21-23 and Wikipedia discloses the additional limitation of claim 24. Therefore, claims 20-24, 28, 32-33 and 35-36 are not allowed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the Office should be directed to the examiner, Lance Sealey, whose telephone number is (703) 305-0026. He can be reached from 7:00 am-3:30 pm EST Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

**Any response to this action should be mailed to:**

MS Mon-Fee Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**or faxed to:**

**(703) 872-9306**



Art Unit 2671

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600